

Abstract

An inkjet printhead chip includes a substrate that incorporates drive circuitry. A plurality of nozzle arrangements is positioned on the substrate. Each nozzle arrangement includes
5 a nozzle chamber wall and a roof wall positioned on the substrate to define a nozzle chamber, the roof wall defining an ink ejection port in fluid communication with the nozzle chamber. An ink ejection member is positioned in the nozzle chamber and is displaceable towards and away from the ink ejection port to eject ink from the ink ejection port. An elongate actuator is fast, at one end, to the substrate to receive an
10 electrical signal from the drive circuitry and fast, at an opposite end, with the ink ejection member. The actuator incorporates a heating circuit that is connected to the drive circuitry layer. The heating circuit is positioned and configured so that, on receipt of, and termination of, a suitable electrical drive signal from the drive circuitry layer, the heating circuit serves to generate differential thermal expansion and contraction,
15 respectively, such that the actuator is displaced to drive the ink ejection member towards and away from the ink ejection port. The drive circuitry is configured to generate a heating signal which is sufficient to heat the actuator, without generating movement, to an extent such that the ink is heated, prior to generating the drive signal.